CLAIMS:

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A rotor for a centrifuge for the separation of solid particles from a fluid, with a rotor housing defining an interior region that is rotatable about a central rotational axis and cylindrical in its basic shape, wherein said rotor housing comprises a fluid inlet, a fluid outlet with at least one propulsion nozzle for driving the rotor by means of the fluid flowing through it, and walls that are provided in and partition the interior region of the rotor, comprising, several wall pairs spaced apart from each other in a circumferential direction provided in the interior rotor region, comprising walls that are also spaced apart from each other in a circumferential direction and enclose between them a space having the approximate shape of a gap, with said space radially extending in an outward direction from a central area that is connected to the fluid inlet and ending within a small fraction of a radius of the rotor housing from a circumferential wall of the rotor housing, thus permitting fluid to enter into the remaining interior rotor region.

2. The rotor according to claim 1, wherein the walls forming the wall pairs extend along planes that are, in substance, arranged parallel to the rotational axis and extend in a substantially radially outward direction.

3. The rotor according to claim 1, wherein the spaces having the shape of a gap form a rotationally symmetric star shape, as seen from a cross-sectional view of the rotor perpendicular to the rotational axis.

4. The rotor according to claim 3, wherein the star shape is formed to comprise three to eight arms.

5. The rotor according to claim 3, wherein the star shape is formed to comprise four to six arms.

6. The rotor according to claim 1, wherein at least one of the two walls of each wall pair is formed to comprise a front wall section that forms a partial and radially outer boundary of the respectively enclosed gap-shaped space and extends in a substantially circumferential direction.

7. The rotor according to claim 6, wherein each front wall section partially delimits the space in the direction of the circumference of the rotor.

8. The rotor according to claim 6, wherein each front wall section partially delimits the space in the direction of the axis of the rotor.

9. The rotor according to claim 1, wherein the two walls of each wall pair are connected to each other via a front wall that extends in a substantially circumferential direction and forms a radially outer boundary of the respectively enclosed gap-shaped space that ends at a distance from the circumferential wall and that a fluid transfer opening is provided in at least one of the front wall, and one wall of the wall pair.

10. The rotor according to claim 6, wherein the radial distance of the front wall section from the rotational axis of the rotor comprises about 70 to 90 percent of the rotor radius.

11. The rotor according to claim 9, wherein the radial distance of the front wall for the rotational axis of the rotor comprises about 70 to 90 percent of the rotor radius.

12. The rotor according to claim 1, wherein one wall of each wall pair each extends to an internal perimeter of the circumferential wall of the rotor housing.

13. The rotor according to claim 12, wherein the rotor is arranged to rotate in a first direction about the rotational axis, and the one wall extending to the internal perimeter of the circumferential wall of the rotor housing is the one wall of each pair that is positioned in the direction of rotation of the rotor relative to the other wall of the pair.

14. The rotor according to claim 1, wherein the two walls of each wall pair extend to an internal perimeter of the circumferential wall of the rotor housing and a fluid transfer opening is provided in at least one of the walls of the wall pair.

15. The rotor according to claim 9, wherein each fluid transfer opening extends as a slot across a radial region of at least one wall of the wall pair and front wall.

16. The rotor according to claim 15, wherein a width of the slot forming the fluid transfer opening decreases in a radial inward direction.

17. The rotor according to claim 1, wherein the walls of each wall pair converge in a radially outward direction.

18. The rotor according to claim 1, wherein the walls of each wall pair are each aligned in parallel with one another in a radially outward direction.

19. The rotor according to claim 1, wherein the walls of each wall pair diverge in a radially outward direction.

20. The rotor according to claim 9, the walls of each wall pair, at a radially outer part thereof, each comprise a lateral curved projection each extending away from the other wall of the wall pair in a circumferential direction to increase the size of the front wall as measured in circumferential direction.

21. The rotor according to claim 1, wherein said rotor comprises a central tube extending concentrically with said rotational axis, wherein said central tube is provided as a fluid inlet to the interior rotor region and is in fluid communication with the spaces respectively enclosed by the wall pairs via apertures.

22. The rotor according to claim 21, wherein a fluid channel is formed inside a lower area of each space, which extends from the apertures into a radially central to outer area of each space.

23. The rotor according to claim 1, wherein the wall pairs, as viewed in the direction of the axis of the rotor, each extend across at least half of the rotor's axial internal height and, at the most, across the rotor's total axial internal height.

24. The rotor according to claim 1, wherein a plurality of intermediate wall search extend in a substantially circumferential direction and end at a distance from an inner side of an upper wall of the rotor housing and are each arranged between two walls of two neighboring wall pairs, wherein said two walls face each other, and said intermediate walls, together with the walls of the wall pairs, form radially inward positioned channels that run to the fluid outlet in the direction of the rotational axis of the rotor.

25. The rotor according to claims 9, wherein a flow guide wall is provided next to each fluid transfer opening on the outside of each associated wall of the wall pair, wherein the flow of fluid from the fluid transfer opening is directed along said flow guide wall in one of a radially outward direction and in a radially outward and axially downward direction.

26. The rotor according to claim 1, wherein a diameter of the rotor exceeds a height of the rotor.

27. The rotor according to claim 1, wherein at least the several wall pairs are made of a single-piece part made of one of injection-molded plastic and light metal, and said part is inserted in the rotor housing as an insert.

28. The rotor according to claim 1, wherein the rotor housing comprises one injection-molded lower housing part and one injection-molded upper housing part and a first part of the walls of the several wall pairs is formed integrally with the lower housing part and a second part of the walls of the several wall pairs is formed integrally with the upper housing part.

29. The rotor according to claim 1, wherein the rotor housing consists of only one injection-molded lower housing part, only one interior housing part and only one upper housing part and the walls of the several wall pairs are at least partially formed integrally with one of the lower housing part, the interior housing part and the upper housing part.